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A Development of Prototype Web Based Template Teaching Aid System

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DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline

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ABSTRACT

One of the major problems with subject notes given by lecturers is that it is not standardized with other lecturer's notes even for the one particular same subject. Standardization of notes is necessary to make teaching and learning process more efficient and beside that it's a benefit for the lecturers and the students. This research is focusing on development of prototype Web Based Template Teaching Aid System that allows the lecturers to edit and write notes in the same styles and also acts as a distribution center of notes. The objectives of this project are to design and develop template that will enable lecturer's notes to be standardized and to design the interface of the prototype. To choose or identify the best slide layout design that being used in this prototype, researcher had made an analysis to many slide layout design samples. Through this development, this web based system provides one platform to user in order to manage notes in a simple way and information can be shared and spread via the Internet.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Notes of reference for a subject are the most important things in the teaching and learning process. It gives students much more understanding about the subject and with it revision for understanding and examination will be much easier. Standardization of notes is necessary to make teaching and learning process more efficient and beside that it benefits the lecturers and students.

1.2 Problem Description

Usually, one subject will have more than one lecturer. Hence, this will lead to some problems such as different contents and presentation styles of the same subject notes. The effect from this problems are the students will easily get confuse with the notes. This is happen since there is more than one class for the subject and each of the class is teach by a different lecturer. The students have to make comparison with other students' notes to make sure that they have cover the same chapter as the rest of the students taught by a different lecturer.

Different lecturers have different styles of teaching and different styles of notes. Some lecturer teaches all topics in the subject, while other lecturer teaches only the important topics and some teaches only subtopic of a particular chapter which they think is important. Sometimes, the lecturers have their own slides for the subject in addition of the existing notes. Knowing this, we know that standardized of the contents will be hard since other lecturers did not know what others lecturers used to teach the subject.

Others than that, the lectures have to update the existing notes as it is not fulfilling the latest syllabus requirement.

One of the problems of standardizing notes is that the lecturers used different application to write their notes.

From the student's point of view, they need to have real-time notes update so that they do not have to wait until the lecturers give them their copy of the notes. They need a specific application or system to get the related notes.

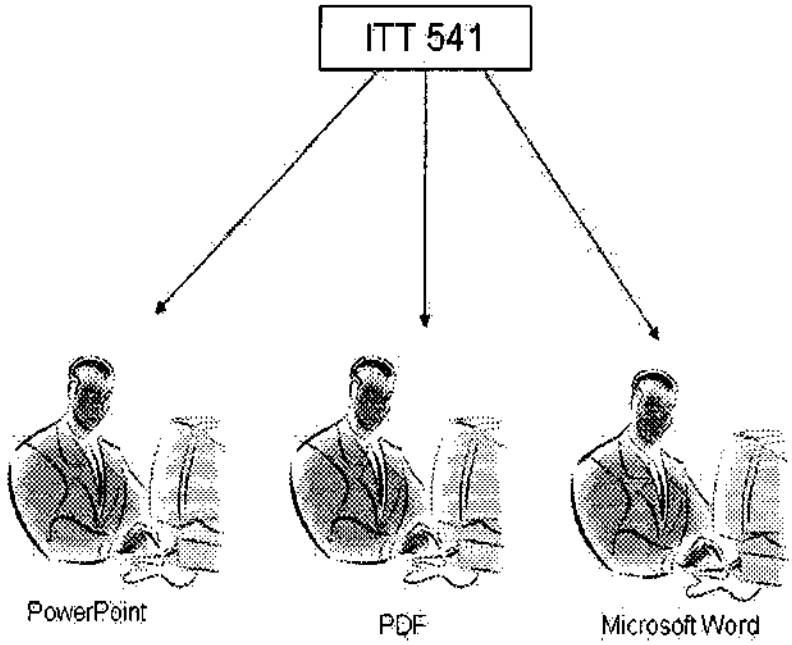

Figure 1.0 Different lecturers used different type of application to present their notes.

Figure 1.0 above shows that one subject will have different lecturers. Each lecturer uses different types of application to write their notes. One of them use PowerPoint Presentation to write his or her notes, then the next lecturer use PDF to present his or her notes while the other one use Microsoft Word to write his or her notes. As a result, the content and styles of the notes are different with each other.

1.3 Aim

This project is to develop a prototype of Web-Based Templates Teaching Aid system.

1.4 Objective

This proposed project is to satisfy these few objectives. The first objective is to design and develop techniques that will enable lecturer's notes to be standardized. Standardization of notes is the most important thing that must consider in this project.

Besides that, the objective of this proposed project is to design and develop interface of this application or system. Interface is also one of the important elements that need to consider in this development.

1.5 Scope

The scope only focuses on two users. The target users of this project are lecturers and students of the Faculty of Information Technology and Quantitative Science. Then, the platform that used to develop this prototype is Windows and only specific for one specific particular subject. This project gives more concentration on slide layout design. The position of title, point and picture is the most important elements that considered by researcher.

1.6 Project Benefits

This system can get some benefits, which are:

- Student also will have benefit from the real-time notes update.
- Less time consuming because this system is web-based system and the system will be access via Internet. Users just type the URL when they want to use the system and they can access the system anytime and anywhere.

1.7 Summary

Web-based application is easy to use and the ability to update and maintain web applications without distributing and installing software on potentially thousands of client computers is a key reason for their popularity. The development of prototype is one of the solutions to the user that need one application can standardize their notes. In this chapter, it has been discussed on the background, problem description, objectives, aim, scope and significance of the project. All of the discussions involved in this chapter are used to give some brief explanations on introduction about the project.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

The world is essentially at one fingertip on the Internet. The internet also can provide a global facility for providing virtual environments and real time situations (Pat,J and Fiaz, H 1998).Recent development in the internet technology and the World Wide Web have the potential of making the product development process truly integrated, simultaneous, flexible and responsive (Somedra Pant and Rajesh Sethi).

2.1 Knowledge Management

Knowledge management proponents today believe that those chance interactions that mix and reformulate knowledge can and should be systematically encouraged. It can happen in one office, but time and geography are no longer constraints to collaborative work. There always have some barriers to people who want to always contact with each other.

In many companies there is a problem of losing so much information on a daily bases, and that's what make knowledge information system important, without it become hard to share information in an organization, and they IT systems simply don't get the job done, because they do not talk to each other. And here where the knowledge management system comes into play, by providing information central repository, which includes indexing and automatic update systems, and that's key to solving this problem. And through knowledge management system organizational work improves dramatically, by insuring that information is shared across the organization and getting the most benefit out of the existing

information and data, and insuring that non-is going to be lost if needed (Igris 2004-5).

Knowledge, the most important asset in any company, is the key to survival in the Information Age. Yet companies are stumped on how to manage something that cannot be quantified, let alone universally defined. When it comes to mixing and remixing people's knowledge, executives know what they want to have happen; they just don't know how to make it happen (Glasser, P 1999).

Most knowledge management products today focus only on content management. Few address learning productivity. And very few indeed address both in concert. Yet studies show that corporate competitive success can be measured by collaborative competency, reflecting the ability of corporate user groups to work together in a productive, collaborative fashion, learning and sharing knowledge efficiently to gain market advantage. Corporate IQ represents the collaborative competency of corporations (McKay B, 2000).

Knowledge can be dividing into some categories which are knowledge acquisition, knowledge storage and organization, knowledge distribution and knowledge application.

Knowledge acquisition is the process of gathering the knowledge (useful for the organization) possessed by the employee. Selecting the knowledge to be captured is of the essence because all the knowledge possessed by employees cannot be and need not be gathered.

Knowledge storage and organization is an appropriate repository to store knowledge must be identified so that it (knowledge) can be accessed when required. Many organizations still store much of their knowledge as paper-based documents such as manuals, books, and files. Paper-based documents are hard to update and distribute. A computerized database is perhaps the most efficient

means of storing data currently available especially for organizations that deal with a great deal of dynamic knowledge.

Knowledge distribution is organizational intranets and the Internet provides efficient mechanisms to share knowledge. Especially in organizations that have a global presence, these technologies can give employees constant access to knowledge repositories as well as other employees at any time or place.

Knowledge application is KM systems often fail because employees are not encouraged and/or trained to use the information made available by KM initiatives appropriately. Thus, easy-to-use technology, use of familiar terminology, training, and high levels of employee-involvement will go a long way towards encouraging employees to use the knowledge within the repository effectively (Hildreth, P.J. & Kimble, C).

The organizational knowledge that constitutes 'core-competency' is more than 'know-what' explicit knowledge which may be shared by several. A core competency requires the more elusive 'know-how' - the particular ability to put know-what into practice (Neovistas, 2004)

Knowledge repository is one of the way people keep the knowledge and allow other people share it. Knowledge Repository is a multi-user integrated environment where multiple users can work with the data simultaneously. The system consists of two structural components: the client application and the database server.

Knowledge repository also has in dynamic form. DKR is the Dynamic Knowledge Repository. Data and Information are outside the DKR until incorporated by a user as an Experience item. Experience is organized into Learning by the contributors using the Open HyperDocument System (OHS).Knowledge derived from this process is the basis of some action, called

Wisdom, taken to solve a DKR problem. This should result in new inputs to Experience, Learning, and possibly knowledge (hypermultimedia.com).

A genuine sharing of knowledge implies a *shared repository* (virtual repository if it is composed of distributed systems) where procedures control the integration of knowledge from the various users (Martin, P and Eklund, P. 1999).

2.2 Related Technical Terminology

2.2.1 Web Based Application

In software engineering, a web application is an application delivered to users from a web server over a network such as the World Wide Web or an intranet. Web applications are popular due to the ubiquity of the web browser as a client, sometimes called a thin client. The ability to update and maintain web applications without distributing and installing software on potentially thousands of client computers is a key reason for their popularity (Wikipedia, 2005)

Based on Ginige and Murugesan S. (2001), in this decade the web based application is widely used and this trend will continue. Web based application could provide many benefits and advantages to people who using it.

Web based application which uses computerized electronic make possible not only the wide and rapid distribution of information but its manipulation, analysis, synthesize and recombination as well (Kumari, S 1996).

Based on the research that had been done by J.Cox and B.G Dale (2002), some key quality factors that should be in the website design and use could be applied in order to design web base application. The key quality factors that have been stated in the research included clarity of purpose, design, accessibility and speed, content, customer service and customer relationship.

2.2.2 Web Server

A computer that delivers (*serves up*) Web pages. Every Web server has an IP address and possibly a domain name. For example, if you enter the URL *http://www.pcwebopedia.com/index.html* in your browser, this sends a request to the server whose domain name is *pcwebopedia.com*. The server then fetches the page named *index.html* and sends it to your browser (Webopedia Computer Dictionary).According to the Arlitt & Walliamson (1997), web servers can easily be configured to deliver static pages to high numbers of concurrent users without substantial performance degradation.

There are many Web Servers currently in the market such as Microsoft Internet Information Server (IIS), O'Reilly's Web Server and Apache Web Server. Apache is another freeware technology, which is the most popular Web Server on the Internet.

2.2.3 Database

Database is simply a collection of data. Database also can define as a set of master files, organized and administered in flexible way, so that the files of the database can easily adapted to new, unforeseen task
(A, Hashim, 2001).
The example of database software is MySQL-Front. MySQL-Front presents a uniform front-end for every database in all current projects. In practice one

can work with a database of one's choice after only a few clicks (mysqlfront.de)

2.2.4 Dreamweaver MX

This software is two in one application, in one a web page design tool (Dreamweaver) as well as and a utility for connecting web pages to dynamic database driven information (Ray,J 2002).

Dreamweaver supports five server technologies which are JSP, Cold Fusion Markup Language (CFML), ASP and PHP.

2.3 Summary

This chapter provides a lot of information about the tools to develop web based application and explanation related development. Solutions of any difficulties or ambiguities that occur during the development phase can be obtained by reviewing these literatures.

CHAPTER 3

RESEARCH APPROACH AND METHODOLOGHY

3.0 Introduction

The chapter will discuss about the project approach and methodology which must be followed in completing this project. Data collection is the most important thing to make an analysis about the related information that is used in the development. Besides that, the process of development web-based application also can be divided into different software process model. This chapter explains the process and method that involved in the development of product.

3.1 Data Collection Methods

For this project, information and data that used is obtained from printed materials such as books, journals and also searching via the internet. To choose or identify the best slide layout design, researcher had made an analysis to many slide layout design samples.

3.2 Software Process Model

Software process model is an abstract of representation software process. Each process model represents a process from a particular perspective so only provides partial information about that process. Different processes are used to develop different part of the system.

The researcher has chosen to use this software life cycle in order to develop A Prototype of Web-Based Templates Teaching Aid System (Web-based application). There are four phases in this software life cycle. Figure 2.0 illustrated the phases of software life cycle model.

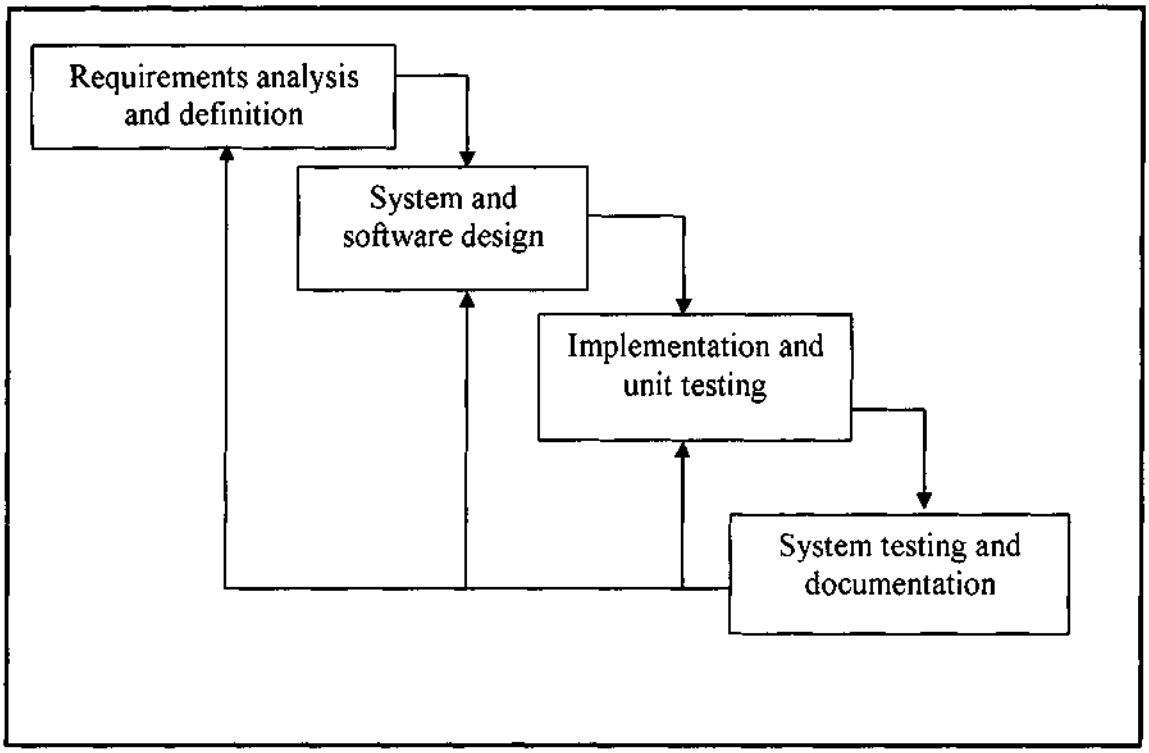

Figure 3.1: Software life cycle model

There are four major phases which is required that is; analysis and definition, system software and design, implementation and unit testing and last phase is system testing and documentation.

3.2.1 Requirements Analysis and Definition

In this phase the requirements of web-based template teaching aid system and the problem definition are establish and defined. Literature review and analysis give a lot of information in order to develop this project. All sources from journals, articles and secondary approaches are compiled and being summarized. Important facts are extracted and used as a guide for web based development.

3.2.2 System and Software Design

The system design process partitions the requirements to either hardware or software systems. It establishes overall system architecture. Software design involves identifying and describing the fundamental software system abstractions and their relationships.

3.2.2.1 Recommended Hardware

Personal Computer, Pentium 4 1.8 GHz Processor
256MB SDRAM, 40GB Harddisk
CD-ROM / CD-RW

3.2.2.2 Recommended Software

Operating System - Windows XP Professional Edition
Internet Browser - Internet Explorer Browser 6.0
Software -
Macromedia Dreamweaver MX 2004
Microsoft Frontpage 2003
MySQL-Front Version 3.1
PHP (Hypertext Processor)
Adobe Photoshop 7.0

3.2.2.3 Database Design

MySQL-Front 3.1 is used for the database development on this prototype system. This prototype requires a few tables. All the tables that used are described as below.

Table Name	Description
login	-This table shows the user table that content user id and password.
chapter	-This table shows the chapter of subject that include in this system where consists id, subject, chapter, title, notes, date, picture and type.

3.2.2.4 Table Structure

All the table structure for database that used in this system is shown as below.

Table Name	Field Name	Field Type	NULL
login	userid	text	Yes
	pass	text	Yes
chapter	Id	int	auto_increment
	subject	text	Yes
	chapter	text	Yes
	title	text	Yes
	notes	text	Yes
	date	date	Yes
	picture	blob	Yes
	type	text	Yes